Palo Verde Nuclear
Generating Station

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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN 50-528, 50-529, and 50-530
Response to NRC Request for Additional Information Re: Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors"

By letter dated September 1, 2004, the NRC requested that Arizona Public Service Company (APS) provide additional information for their review of APS' response to Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors." The requested information is provided in Enclosure 1 to this letter. Enclosure 2 contains a list of new regulatory commitments being made in this letter.

If you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,

David Mauldin

CDM/TNW/GAM

Enclosures: 1. Response to NRC Request for Additional Information Re: Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors"

2. List of New Regulatory Commitments

cc: B. S. Mallett — NRC Region IV Regional Administrator
M. B. Fields — NRC NRR Project Manager
N. L. Salgado — NRC Senior Resident Inspector for PVNGS

A103

ENCLOSURE 1

Arizona Public Service Company Response to September 1, 2004, NRC Request for Additional Information Re: Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors"

Background

By letter dated August 8, 2003, Arizona Public Service Company (APS) provided its 60-day response to NRC Bulletin 2003-01 for the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. In a letter to APS dated September 1, 2004, the NRC staff requested additional information to complete their review of APS' Bulletin 2003-01 response. Provided below are the NRC requests and APS responses.

NRC Request No. 1

> Section 2.3 of the August 8 response states that "[APS] Engineering will identify plant changes needed to address the potential for debris accumulation on the pump bay personnel access doors. This action will be completed by November 30, 2003, with any plant changes to be implemented prior to startup following the subsequent refueling outages in each unit ..." Please describe in detail the plant changes which were identified, the basis or bases for implementing the plant changes, the schedule for and completion status of the changes, any changes to any operating or maintenance procedures, and associated operator training.

APS Response to Request No. 1

Plant Changes:

The plant modification being implemented in PVNGS Units 1, 2, and 3 to address the potential for debris accumulation on the reactor coolant pump (RCP) bay personnel access doors is a physical restraint to hold the doors open during Modes 1, 2, 3, and 4 (except when being utilized as a locked high radiation barrier in Modes 3 and 4 for compliance with Technical Specification 5.7.2) (DMWO 2646151). The hold-open restraints consist of a chain and snap hook mechanism which is eye bolt anchored to the adjacent concrete bioshield wall and fastened around the wire mesh door frame back to the installed eye bolt to secure the door in the opened position.

Basis for Changes:

The modification and procedure changes to latch open the RCP bay doors at the containment floor elevation is an enhancement that was selected because it is a fairly simple change that could provide additional assurance that, during a LOCA inside the

RCP pump bays, break flow from the pump bays back to the containment sumps would remain unimpeded. This modification is considered an enhancement because of the minimal quantities of transportable insulation materials located inside the pump bays, as documented during the walkdowns performed in accordance with NEI 02-01, and the fact that alternate flow paths would exist through the adjacent pump bay entrances should LOCA generated debris accumulate on any one of the wire mesh doors. Additionally, since the bay doors are made of course mesh screen, most, if not all, fibrous materials that would reach the doors would be expected to transport through.

Schedule and Implementation Status:

Implementation of the modification and procedure changes is consistent with the commitment in APS' August 8, 2003 response to Bulletin 2003-01. The modification and associated procedure changes have been implemented in Unit 1. The modification and procedure changes will be implemented in Unit 3 during its current refueling outage, scheduled for completion in November 2004, and in Unit 2 during its next refueling outage, scheduled for completion in May 2005.

Associated Procedure Changes:

The modification to install the RCP bay door hold-open restraints includes adding steps to PVNGS procedure, 40ST-9ZZ09, "Containment Cleanliness Inspection," to ensure that the doors are latched open during operating Modes 1 through 4 except when locked closed by Radiation Protection as a locked high radiation area barrier in Modes 3 or 4.

Associated Operator Training:

The affected groups were notified of the modification and of the specific changes to the containment cleanliness inspection procedure by e-mail when the procedure changes were implemented in Unit 1. No additional training was deemed necessary because the action needed to latch open the RCP bay doors is a simple, easily understood action to hook a chain through the mesh door, and each step in the procedure, including the step to latch open the RCP bay doors, must be checked off when completed.

NRC Request No. 2

Sections 3.1, 3.2, 3.3, 3.4 and 3.5 of the August 8 response states that APS plans to defer the following training/changes until the Westinghouse Owner's Group (WOG) addresses the issues and related revisions to the EPGs in CEN-152 are effected:

a. Operator and staff training on indications of and responses to sump clogging.

b Procedure actions that delay the switchover to containment sump recirculation.

c. Procedure actions that delay refueling water tank (RWT) inventory depletion.

d. Procedure changes that provide for alternate water sources to refill the RWT.

e. Procedure changes that provide for alternate sources to inject water into the reactor coolant system.

The WOG has now developed operational guidance in response to Bulletin 2003-01 for Westinghouse and CE plants. Please provide a discussion of your plans to consider implementing this new WOG guidance. Include a discussion of the WOG compensatory measures that have been or will be implemented for your plants. Provide technical justification for those WOG recommended compensatory measures not being implemented at your plants. Also include a detailed discussion of the procedures being modified, the operator training being implemented, and your schedule for implementing these compensatory measures.

APS Response to Request No. 2

Westinghouse, sponsored by WOG, issued WCAP-16204, "Evaluation of Potential ERG and EPG Changes to Address NRC Bulletin 2003-01 Recommendations," Revision 1, dated March 2004, to provide potential operational guidance in response to Bulletin 2003-01. APS has initiated a review of the generic operational guidance documented in WCAP-16204. Final review and recommendations for the candidate operator actions documented in WCAP-16204, Revision 1, will be completed by February 25, 2005. Within 30 days of completion of the review (i.e. by March 25, 2005), APS will submit to the NRC a schedule for implementation of those operator actions determined to be risk beneficial and that can be implemented on an accelerated basis satisfying the intent of the request for compensatory action.

As documented in Section 1.1 of APS' original response to NRC Bulletin 2003-01, the potential for degraded ECCS/CSS performance due to accumulation of LOCA generated debris at PVNGS is considered low. The basis established in the original response is predicated on the PVNGS as-built design which minimizes potential fibrous debris sources and limits the transportability of any generated debris. In addition, the available surface area of the two independent sump screens is large and can accommodate significant quantities of debris. Accordingly, the compensatory operator actions would be considered enhancements and not requirements, allowing for thorough evaluation on the schedule discussed above.

NRC Request No. 3

NRC Bulletin 2003-01 provides possible interim compensatory measures licensees could consider to reduce risks associated with sump clogging. In addition to those compensatory measures listed in Bulletin 2003-01, licensees may also consider implementing unique or plant-specific compensatory measures, as applicable. Please discuss any possible or unique plant-specific compensatory measures you considered for implementation at your plant. Include a basis for rejecting any of these additional considered measures.

APS Response to Request No. 3

No additional plant specific compensatory measures were considered necessary. The current design configuration at PVNGS minimizes the risk of degraded ECCS/CSS performance due to containment sump screen blockage by minimizing the debris source terms and the transportability of such materials. In addition, the size of the as-built sump screen structures is tolerant of a very large amount of debris. The combination of these effects suggests that the potential for sump blockage is small for the most likely LOCA scenarios as already documented in NUREG/CR-6762.

Enclosure 2

New Regulatory Commitments

The following table identifies those new actions committed to by APS in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Thomas N. Weber at (623) 393-5764.

NEW REGULATORY COMMITMENT	DUE DATE
Final review and recommendations for the candidate operator actions documented in WCAP-16204, Revision 1, will be completed by February 25, 2005.	February 25, 2005
Within 30 days of completion of the review [of WCAP-16204] (i.e., by March 25, 2005), APS will submit to the NRC a schedule for implementation of the operator actions determined to reduce the risk associated with sump screen blockage.	March 25, 2005